

## SEQUENCE LISTING

<110> University of Florida Research Foundation, Inc.  
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Tieman, Denise

<120> Materials and Methods for Synthesis of a Flavor and Aroma Volatile in Plants

<130> UF.386CXC1

<140> 10/574,124  
<141> 2007-04-23

<150> PCT/US2004/032599  
<151> 2004-10-01

<150> 60/558,504  
<151> 2004-03-31

<150> 60/508,568  
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<170> PatentIn version 3.5

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Leu	Leu	Glu	Glu	Gly	Ser	Phe	Asp	Ala	Val	Val	Asp	Gly	Cys	Glu	Gly
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Phe Val Lys Glu Lys Gly Ile Asp Met Val Val Val Asn Pro Ala Met  
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Val Ile Gly Pro Leu Leu Gln Pro Thr Leu Asn Thr Ser Ser Ala Ala  
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Gly Trp Val Asn Val Lys Asp Val Ala Asn Ala His Ile Leu Ala Phe  
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Glu Asn Pro Ser Ala Asn Gly Arg Tyr Leu Met Val Glu Arg Val Ala  
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His Tyr Ser Asp Ile Leu Lys Ile Leu Arg Asp Leu Tyr Pro Thr Met  
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Gln Leu Pro Glu Lys Cys Ala Asp Asp Asn Pro Leu Met Gln Asn Tyr  
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Gln Val Ser Lys Glu Lys Ala Lys Ser Leu Gly Ile Glu Phe Thr Thr  
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Leu Asp Cys Thr Leu Met Asn Tyr Ile Asp Thr Leu Thr Gln Arg Ile			
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Asn Tyr His Ile Gly Tyr Pro Val Asn Ile Cys Tyr Glu His Tyr Ala		
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Asn Leu Ala Pro Leu Leu Gln Phe His Leu Asn Asn Cys Gly Asp Pro		
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Phe Leu Gln Asn Thr Val Asp Phe His Ser Lys Asp Phe Glu Val Ala		
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Trp Gly Tyr Val Thr Asn Gly Gly Thr Glu Gly Asn Leu His Gly Ile  
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Leu Val Gly Arg Glu Leu Phe Pro Asp Gly Ile Leu Tyr Ala Ser Lys  
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Asp Ser His Tyr Ser Val Ala Lys Ala Ala Met Met Tyr Arg Met Asp  
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Phe Glu Asn Ile Asn Ala Ser Ile Asn Gly Glu Ile Asp Tyr Ser Asp  
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Leu Lys Val Lys Leu Leu Gln Asn Lys Gly Lys Pro Ala Ile Ile Asn  
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Val Thr Ile Gly Thr Thr Phe Lys Gly Ala Val Asp Asp Leu Asp Val  
225 230 235 240

Ile Leu Gln Ile Leu Glu Cys Gly Tyr Thr Arg Asp Gln Phe Tyr  
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Ile His Cys Asp Ala Ala Leu Asn Gly Leu Ile Ile Pro Phe Ile Lys  
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Asn Met Ile Thr Phe Lys Lys Pro Ile Gly Ser Val Thr Ile Ser Gly  
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His Lys Phe Leu Gly Cys Pro Met Pro Cys Gly Val Gln Ile Thr Arg  
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Lys Ser Tyr Ile Asn Asn Leu Ser Arg Arg Val Glu Tyr Ile Ala Ser  
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Val Asp Ala Thr Ile Ser Gly Ser Arg Asn Gly Leu Thr Pro Ile Phe  
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345

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Val Lys Arg Cys Phe Asp Asn Ala Lys Tyr Leu Lys Asp Arg Leu Gln  
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Cys Val Arg Asp Met Ala His Val Ile Val Met Pro Gly Ile Thr Arg  
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Trp Tyr Gln Asp Gly Arg Ile Ser Pro Pro Cys Val Ala Asn Asp Ile  
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Leu	Phe	Pro	Asn	Val	Asp	Asn	Lys	Lys	Gln	Lys	Met	Ala	Gln	Pro	Gly
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Thr Leu Thr Gln Arg Val Asn Tyr His Leu Gly Tyr Pro Val Asn Ile  
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Cys Tyr Asp His Tyr Ala Thr Leu Ala Pro Leu Leu Gln Phe His Leu  
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Ile Glu Lys Asp Gln Tyr Trp Gly Tyr Val Thr Asn Gly Gly Thr Glu  
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Gly Asn Leu His Gly Ile Leu Leu Gly Arg Glu Leu Leu Pro Glu Gly  
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Glu Met Asp Tyr Ser Asp Leu Arg Ala Lys Leu Leu Gln Asn Lys Asp  
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Lys Pro Ala Ile Ile Asn Val Thr Ile Gly Thr Thr Phe Lys Gly Ala  
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Ile Asp Asp Leu Asp Val Ile Leu Glu Ile Leu Lys Glu Cys Gly Tyr  
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Ser Gln Asp Arg Phe Tyr Ile His Cys Asp Ala Ala Leu Cys Gly Leu  
260 265 270

Met Thr Pro Phe Ile Asn Asn Met Ile Ser Phe Lys Lys Pro Ile Gly  
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Ser Val Thr Ile Ser Gly His Lys Phe Leu Gly Cys Pro Met Pro Cys  
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Gly Val Gln Ile Thr Arg Lys Ser Tyr Ile Asn Asn Leu Ser Thr Asn  
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Val Glu Tyr Ile Ala Ser Val Asp Ala Thr Ile Ser Gly Ser Arg Asn  
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Gly Leu Thr Pro Ile Phe Leu Trp Tyr Ser Leu Ser Ala Lys Gly Gln  
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Val Gly Leu Gln Lys Asp Val Lys Arg Cys Leu Asp Asn Ala Lys Tyr  
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Leu Lys Asp Arg Leu Gln Gln Ala Gly Ile Ser Val Met Leu Asn Glu  
370 375 380

Leu Ser Ile Ile Val Val Leu Glu Arg Pro Arg Asp His Glu Phe Val  
385 390 395 400

Arg Arg Trp Gln Leu Ser Cys Val Lys Asp Met Ala His Val Ile Val  
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Met Pro Gly Ile Thr Arg Glu Met Leu Asp Asn Phe Met Ser Glu Leu  
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Val Gln Gln Arg Lys Val Trp Tyr Gln Asn Gly Lys Thr Asp Pro Pro  
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Asn Asn Ala Gly Pro Ser Leu Asp Thr Ile Leu Val Asn Tyr Leu Asp  
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Thr Leu Thr Gln Arg Val Asn Tyr His Leu Gly Tyr Pro Val Asn Ile  
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Cys Tyr Asp His Tyr Ala Thr Leu Ala Pro Leu Leu Gln Phe His Leu  
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Asn Asn Cys Gly Asp Pro Phe Leu Gln Asn Thr Val Asp Phe His Ser  
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Lys Asp Phe Glu Val Ala Val Leu Asn Trp Phe Ala Lys Leu Trp Glu  
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Ile Glu Lys Asp Gln Tyr Trp Gly Tyr Val Thr Asn Gly Gly Thr Glu  
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Gly Asn Leu His Gly Ile Leu Leu Gly Arg Glu Leu Leu Pro Asp Gly  
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Ile Leu Tyr Ala Ser Lys Asp Ser His Tyr Ser Val Phe Lys Ala Ala  
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Arg Met Tyr Arg Met Asp Ser Glu Thr Ile Asn Thr Ser Val Asn Gly  
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Glu Met Asp Tyr Ser Asp Leu Arg Ala Lys Leu Leu Gln Asn Lys Asp  
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Lys Pro Ala Ile Ile Asn Val Thr Ile Gly Thr Thr Phe Lys Gly Ala  
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Ile Asp Asp Leu Asp Val Ile Leu Glu Thr Leu Lys Glu Cys Gly Tyr  
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Ser Gln Asp Arg Phe Tyr Ile His Cys Asp Ala Ala Leu Cys Gly Leu  
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Ser Val Thr Ile Ser Gly His Lys Phe Leu Gly Cys Pro Met Pro Cys  
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Val Glu Tyr Ile Ala Ser Val Asp Ala Thr Ile Ser Gly Ser Arg Asn  
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Arg Arg Trp Gln Leu Ser Cys Val Lys Asp Met Ala His Val Ile Val  
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Met Pro Gly Ile Thr Arg Glu Met Leu Asp Asn Phe Thr Ser Glu Leu  
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Val Gln Gln Arg Lys Val Trp Tyr Gln Asn Gly Gln Thr Asn Pro Pro  
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35 40 45

His Leu Ile Ser Leu Gly Gly Ala Lys Glu Arg Leu His Leu Phe Lys  
50 55 60

Ala Asn Leu Leu Glu Glu Gly Ser Phe Asp Ala Val Val Asp Gly Cys  
65 70 75 80

Glu Gly Val Phe His Thr Ala Ser Pro Phe Tyr Tyr Ser Val Thr Asp  
85 90 95

Pro Gln Ala Glu Leu Leu Asp Pro Ala Val Lys Gly Thr Leu Asn Leu  
100 105 110

Leu Gly Ser Cys Ala Lys Ala Pro Ser Val Lys Arg Val Val Leu Thr  
115 120 125

Ser Ser Ile Ala Ala Val Ala Tyr Ser Gly Glu Pro Arg Thr Pro Glu  
130 135 140

Val Val Val Asp Glu Ser Trp Trp Thr Ser Pro Asp Tyr Cys Arg Glu  
145 150 155 160

Lys Gln Leu Trp Tyr Val Leu Ser Lys Thr Leu Ala Glu Asp Ala Ala  
165 170 175

Trp Lys Phe Val Lys Glu Lys Gly Ile Asp Met Val Ala Ile Asn Pro  
180 185 190

Ala Met Val Ile Gly Pro Leu Leu Gln Pro Thr Leu Asn Thr Ser Ser  
 195 200 205

Ala Ala Val Leu Asn Leu Val Asn Gly Ala Glu Thr Tyr Pro Asn Ala  
 210 215 220

Thr Phe Gly Trp Val Asn Val Lys Asp Val Ala Asn Ala His Ile Leu  
 225 230 235 240

Ala Phe Glu Asn Pro Ser Ala Asn Gly Arg Tyr Leu Met Val Glu Arg  
 245 250 255

Val Ala His Tyr Ser Asp Ile Leu Lys Ile Leu Arg Glu Leu Tyr Pro  
 260 265 270

Thr Met Arg Leu Pro Glu Lys Cys Ala Asp Asp Asn Pro Leu Met Gln  
 275 280 285

Asn Tyr Gln Val Ser Lys Glu Arg Ala Lys Ser Leu Gly Val Glu Phe  
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Thr Pro Leu Glu Glu Ser Ile Lys Glu Thr Val Glu Ser Leu Lys Glu  
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Lys Lys Phe Phe Gly Gly Ser Ser Ala Met  
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gaaccttctt tgaacaataa tggccttct ttggacacta tcttggtcaa ttatttggac		240
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tatgcatctt tagcaccact tttgcagttt cacctaaaca attgtggtga tcctttccta		360
caaaacactg tcgatttcca ttcaaaagac tttgaagtgg ctgtttgga ttggtttgc		420

aaactatggg aaattgaaaa gcatcaatat tggggatatg ttaccaatgg tggcaccgaa	480
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Leu	Phe	Pro	Asn	Val	Asp	Asn	Lys	Lys	Gln	Lys	Val	Glu	Gln	Ser	Gly

Ala Gly Pro Arg Lys Asn Leu Gln Leu Glu Val Met Glu Pro Ser Leu  
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Asn Asn Asn Gly Pro Ser Leu Asp Thr Ile Leu Val Asn Tyr Leu Asp  
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Thr Leu Thr Gln Arg Val Asn Tyr His Leu Gly Tyr Pro Val Asn Ile  
 85 90 95

Cys Tyr Asp His Tyr Ala Ser Leu Ala Pro Leu Leu Gln Phe His Leu  
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Asn Asn Cys Gly Asp Pro Phe Leu Gln Asn Thr Val Asp Phe His Ser  
 115 120 125

Lys Asp Phe Glu Val Ala Val Leu Asp Trp Phe Ala Lys Leu Trp Glu  
 130 135 140

Ile Glu Lys Asp Gln Tyr Trp Gly Tyr Val Thr Asn Gly Gly Thr Glu  
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Gly Asn Leu His Gly Ile Leu Leu Gly Arg Glu Leu Leu Pro Glu Gly  
 165 170 175

Ile Leu Tyr Ala Ser Lys Asp Ser His Tyr Ser Val Phe Lys Ala Ala  
 180 185 190

Arg Met Tyr Arg Met Asp Ser Glu Thr Ile Asn Thr Ser Val Thr Gly  
 195 200 205

Glu Met Asp Tyr Ser Asp Leu Arg Ala Lys Leu Leu Gln Asn Lys Asp  
 210 215 220

Lys Pro Ala Ile Ile Asn Val Thr Ile Gly Thr Thr Phe Lys Gly Ala  
 225 230 235 240

Ile Asp Asp Leu Asp Val Ile Leu Glu Thr Leu Lys Glu Cys Gly Tyr  
 245 250 255

Ser Gln Asp Arg Phe Tyr Ile His Cys Asp Ala Ala Leu Cys Gly Leu  
 260 265 270

Met Thr Pro Phe Ile Asn Asn Met Ile Ser Phe Lys Lys Pro Ile Gly  
275 280 285

Ser Val Thr Ile Ser Gly His Lys Phe Leu Gly Cys Pro Met Pro Cys  
290 295 300

Gly Val Gln Ile Thr Arg Lys Ser Tyr Ile Asn Asn Leu Ser Thr Asn  
305 310 315 320

Val Glu Tyr Ile Ala Ser Val Asp Ala Thr Ile Ser Gly Ser Arg Asn  
325 330 335

Gly Leu Thr Pro Ile Phe Leu Trp Tyr Ser Leu Ser Ala Lys Gly Gln  
340 345 350

Val Gly Leu Gln Lys Asp Val Lys Arg Cys Leu Asp Asn Ala Lys Tyr  
355 360 365

Leu Lys Asn Arg Leu Gln Gln Ala Gly Ile Ser Val Met Leu Asn Glu  
370 375 380

Leu Ser Ile Ile Val Val Leu Glu Arg Pro Arg Asp His Glu Phe Val  
385 390 395 400

Arg Arg Trp Gln Leu Ser Cys Val Lys Asp Met Ala His Val Ile Val  
405 410 415

Met Pro Gly Ile Thr Arg Glu Met Leu Asp Asn Phe Val Ser Glu Leu  
420 425 430

Val Gln Gln Arg Lys Gln Trp Tyr Arg Asp Gly Lys Ala Glu Ala Pro  
435 440 445

Cys Val Gly Glu Asp Ile Gly Ala Gln Asn Cys Ala Cys Ser Tyr His  
450 455 460

Lys Ile Asp Tyr Ile Gly Pro  
465 470